

iPAQ Networking 11 Mbps Wireless USB Adapter



Installation and Setup Guide

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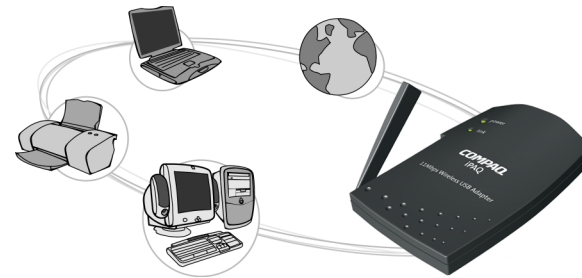
iPAQ Networking 11 Mbps Wireless USB Adapter
Installation and Setup Guide
First Edition (June 2001)

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Introduction

Welcome to iPAQ Networking! Thank you for your purchase of the iPAQ Networking 11 Mbps Wireless USB Adapter. The Compaq family of iPAQ Networking products will help you simplify your life and connect your world. With iPAQ Networking, you can connect all of your PCs for simultaneous access to files, printers, peripheral devices, and the Internet!



This guide is designed to help you:

- > Get acquainted with the features of your new Wireless USB Adapter
- > Install the Wireless USB Adapter correctly
- > Locate technical specifications, customer service information, and troubleshooting information
- > Learn about wireless networking
- > Learn how to use your network

Features and Benefits

The iPAQ Networking 11Mbps Wireless USB Adapter, when used with another wireless networking device such as another Wireless USB Adapter or a Wireless PC Card, connects your PC to your network. Key features are listed below.

<i>Features</i>	<i>Benefits</i>
High Performance	Your Wireless USB Adapter works at speeds up to 11Mbps, with a range of up to 100 meters indoors and 300 meters outdoors, depending on your networking environment.
Industry Standard Wireless Networking	Your Wireless USB Adapter conforms to the IEEE 802.11b standard.
Easy to Set Up and Use	iPAQ Networking solutions come with easy-to-follow instructions and intelligent software that guides you through the installation process. You can easily set up your network to share Internet access, share files and printers, or play the latest multi-player PC games.
Advanced Bridging Technology	Even if you have a combination of Ethernet, wireless, or phone line products in your networking environment, the iPAQ Networking software has the power to bring them together, or create a bridge, so they operate as one integrated network.
Share Internet Access	iPAQ Networking allows you to share a single Internet account and let more than one computer use it at the same time! Simultaneous Web surfing works with cable and DSL high-speed Internet access as well as with standard dial-up.

<i>Features</i>	<i>Benefits</i>
Printer and Device Sharing	Share devices connected to one computer on the network with other computers on the network. You can share printers, scanners, Zip drives, CD-ROM, and more from any networked PC.
File Sharing	Move or copy files between all of your networked PCs quickly and easily.
Multi-Player Gaming	Play real-time multi-player games with anyone on the network. When you make a move or score points, the other player sees the action on his connected PC live!
Digital Music and Picture Sharing	Easily play digital music and view pictures anywhere on your network.

What's in the Box?

- > **iPAQ Networking 11Mbps Wireless USB Adapter.** This is the device that links your computer to the network.
- > **Quick Setup Guide.** Easy-to-follow images and step-by-step instructions help you quickly install your Wireless USB Adapter.
- > **iPAQ Networking CD.** This CD contains internet-sharing and networking software, a wireless configuration utility, user and troubleshooting guides, and hardware drivers.
- > **Warranty card.** Explains the iPAQ Networking standard warranty.

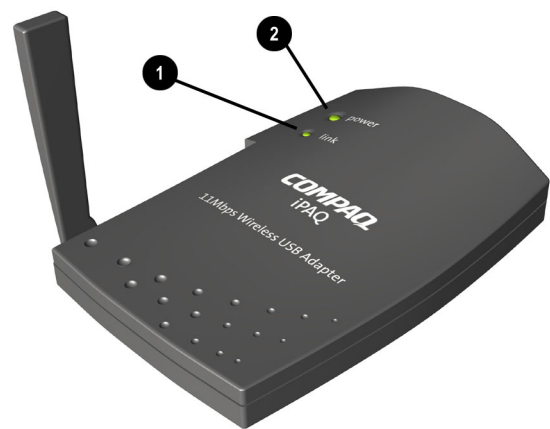
What Else Do I Need?

The iPAQ Networking 11Mbps Wireless USB Adapter requires the following PC features to operate:

- > Intel® Pentium processor or higher
- > Minimum 32MB RAM
- > Microsoft® Windows® 98, 98SE, ME, or 2000
- > An available USB port
- > One networking adapter installed on each PC on the network.

About Your Wireless USB Adapter

Before you begin installation, familiarize yourself with your iPAQ Networking 11Mbps Wireless USB Adapter.

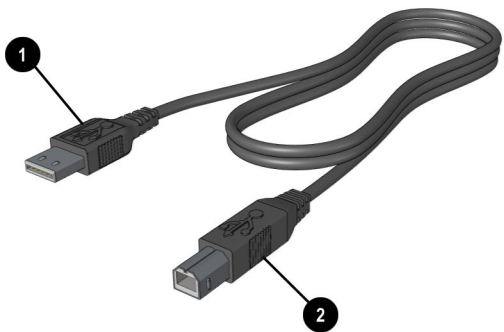


Your Wireless USB Adapter has two LED indicators:

No.	Description
❶	A steady green LINK light indicates a good connection with the network. A flashing green LINK indicates that your Wireless USB Adapter is sending or receiving data.
❷	A solid green light indicates that the device is powered on.

USB Cable

The iPAQ Networking 11 Mbps Wireless USB Adapter comes with one USB cable. The cable has two connector ends: one rectangular (Type A ❶) and the other square (Type B ❷). These connectors are explained in more detail in “Connecting the Wireless USB Adapter to Your PC.”



Considerations for Wireless Networking

Your new iPAQ Networking 11Mbps Wireless USB Adapter provides easy-to-use, high-speed wireless connectivity up to 100 meters (320 feet) away indoors and up to 300 meters (980 feet) away outdoors. The distance that your Wireless USB Adapter can achieve may vary based on physical barriers, such as walls and ceilings, and background radio frequency noise that could interfere with the signal.

Networking Environment

Things to keep in mind when setting up a wireless network:

1. Position your computer so that the number of walls and ceilings between it and your other wireless PCs (as well as wireless access points and wireless residential gateways, if you're using them) is minimized. Each wall or ceiling reduces the range of the signal.
2. The direct line between access points can be affected by degree angles, i.e., from a 45-degree angle, a half-meter-thick wall appears to be almost one meter thick. Try to position your connections at the same level, so that the signals travel in a horizontal line.
3. Be aware of the effect different building materials may have. A solid metal door or aluminum studs can negatively impact the range of the signal. Try to position connections so that the signals travel through drywall or open doorways.

4. Keep your Wireless USB Adapter at least two meters away from electrical devices such as microwaves, monitors, and electric motors, which can generate radio frequency noise.

Networking Scenarios

1. **Peer-to-peer.** On a peer-to-peer network, computers are connected directly to one another. Data flows from PC to PC without the assistance of an access point or a residential gateway. To share Internet access with other PCs on the network, you must configure one PC as the Internet-sharing PC. This configuration requires a wireless networking adapter and the iPAQ Networking software on each PC on the network.
2. **Networking with an access point, residential gateway, or router.** If you are using an access point, residential gateway, or router on your network, consult the documentation that came with these devices. It is recommended that you *not* use the iPAQ Networking software to configure your network. Only install the drivers, the configuration utility, and your hardware. Use the networking software that came with your access point, residential gateway, or router to set up your network.

Installing the Wireless USB Adapter

The iPAQ Networking 11Mbps Wireless USB Adapter connects to the USB port on your computer. If you are having trouble locating this port, refer to your computer user's manual or consult the manufacturer of your computer.

Overview

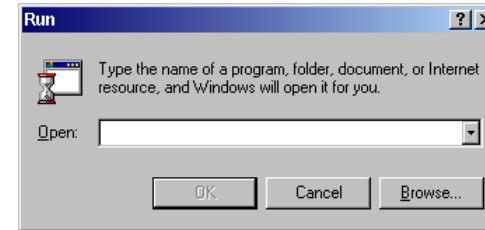
Installing the Wireless USB Adapter involves these steps:

- > Installing drivers and configuration utility
- > Installing Wireless USB Adapter

The following pages contain step-by-step procedures for each item on this checklist.

Installing the Drivers and Configuration Utility

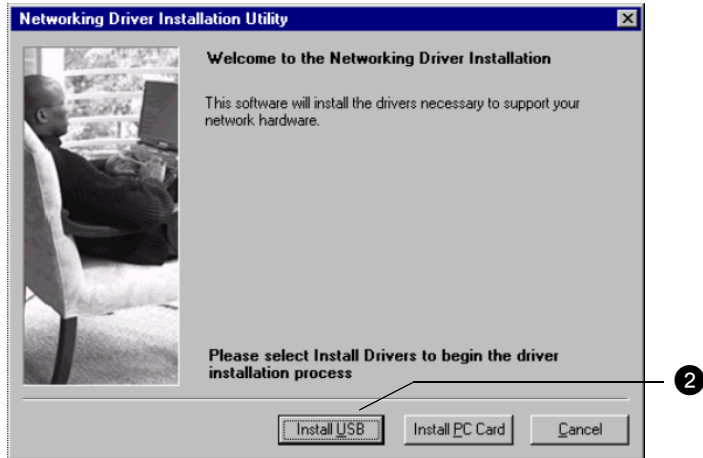
1. Insert the **iPAQ Networking CD** into the CD-ROM.
The iPAQ Networking menu should display automatically.
If the menu is displayed, proceed to step 5.
2. If the menu does not display: From the task bar, select **Start > Run**.
The Run dialog box is displayed.



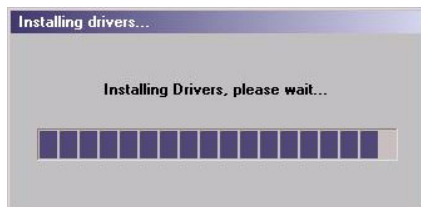
3. Type **D:\setup.exe** (replacing D with the drive letter of your CD-ROM, if necessary) into the **Open** field.
4. Click **OK**.
The iPAQ Networking menu is displayed.



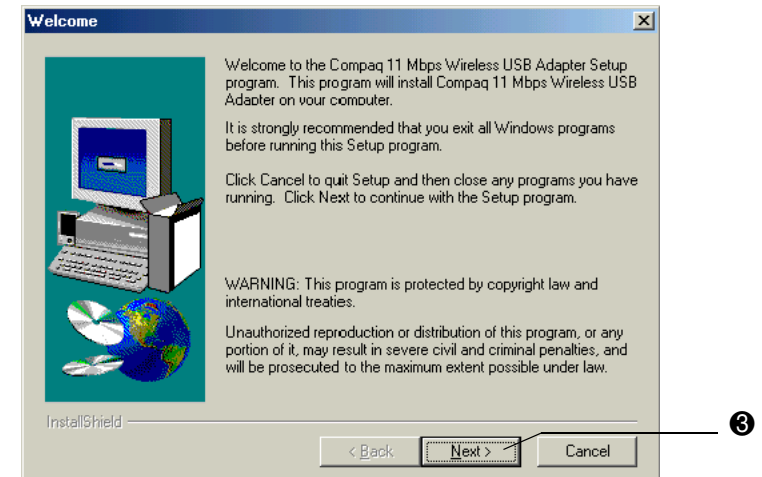
5. Click **Install Drivers and Configuration Utility** ❶ to start the driver installation software.
The Networking Driver Installation Utility window is displayed.



6. Click **Install USB** in this panel to start installing the drivers. ②
A progress indicator is displayed while the files are being installed.

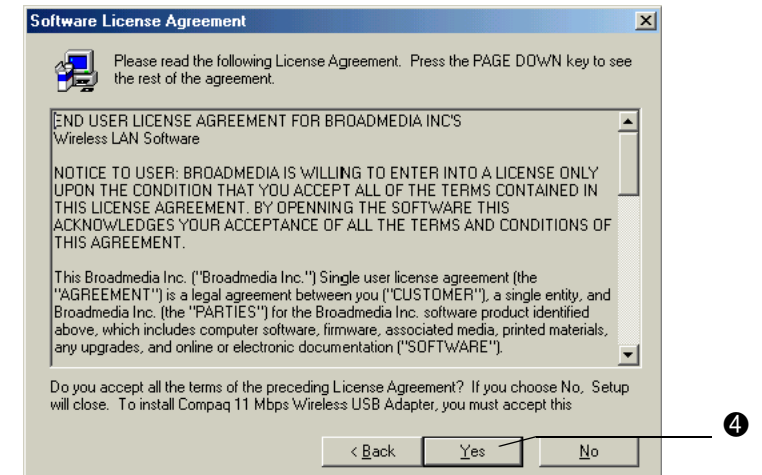


The welcome window is displayed.



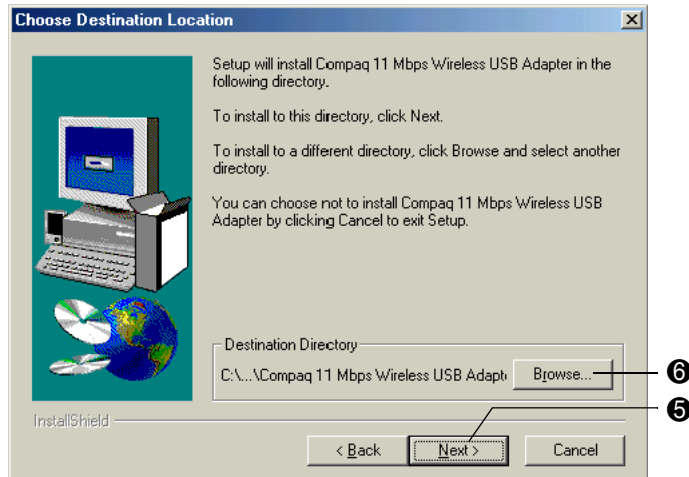
7. Click **Next**. ③

The Software License Agreement window is displayed.



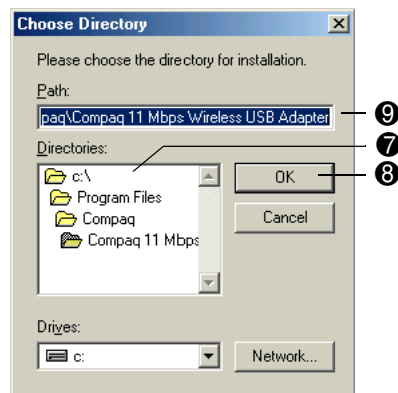
8. Click **Yes**. ④

The Choose Destination Location window is displayed.



9. To accept the default directory, click **Next** ⑤ and proceed to step 11.

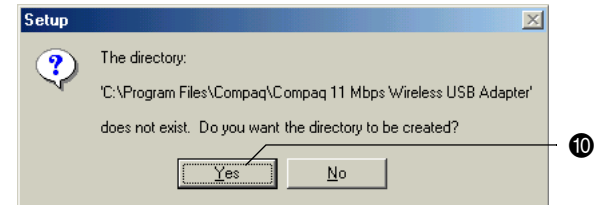
To choose a different directory, click **Browse**. ⑥
The Choose Directory window is displayed.



10. Select a directory from the **Directories** list, ⑦ click **OK**, ⑧ and proceed to step 11.

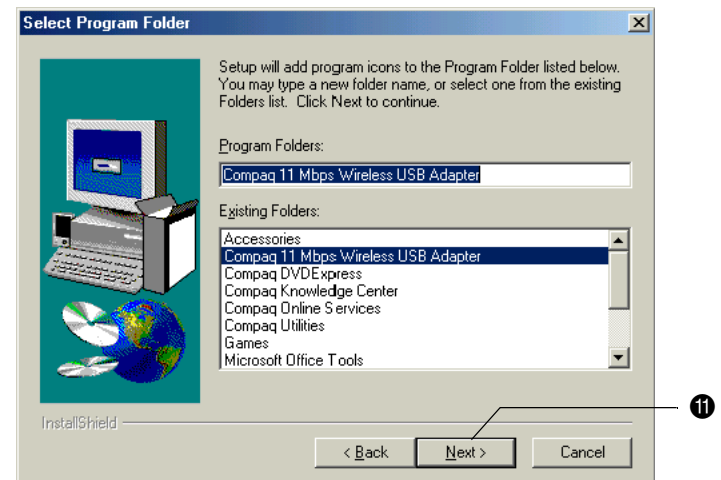
Or, type a path and name for directory into the **Path** ⑨ field and click **OK**. ⑧

A confirmation dialog box is displayed.



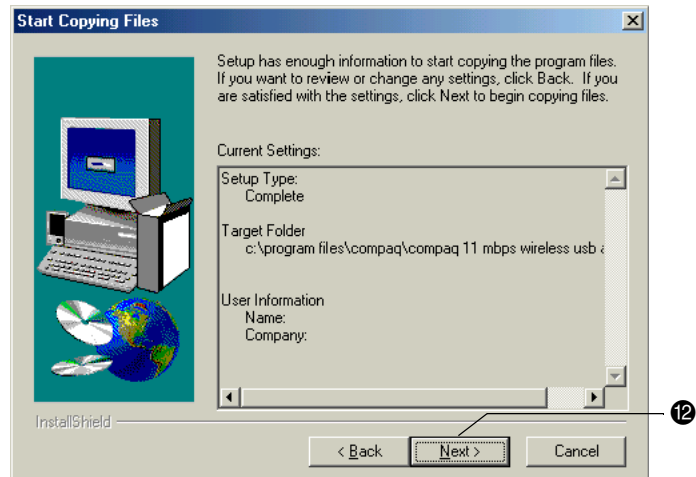
11. Click **Yes**. ⑩

The Select Program Folder window is displayed.



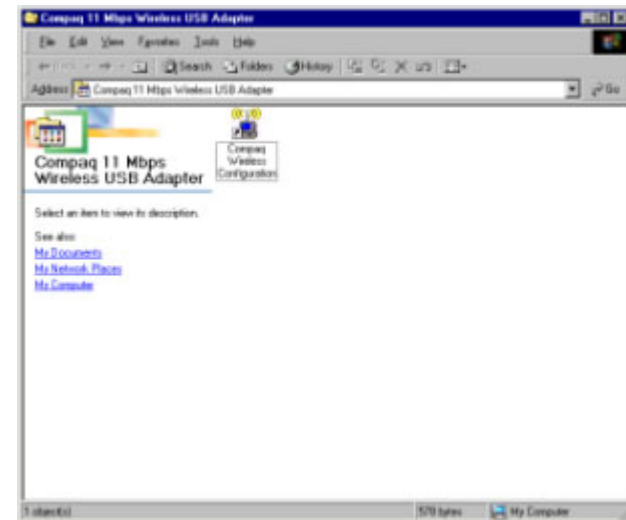
12. Click **Next**. ⑪

The Start Copying Files window is displayed.



13. Click **Next**. ⑫

The Compaq 11 Mbps Wireless USB Adapter program folder window is displayed.



Minimize the program folder window.

You will need to maximize this window in a few minutes.

14. The Finish window is displayed.

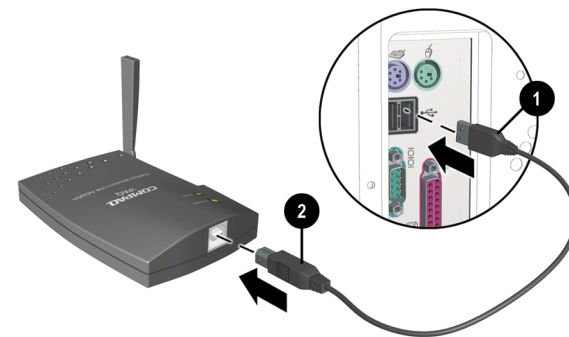


Click **Finish**. 13

Connecting the Wireless USB Adapter to Your PC

The iPAQ Networking 11 Mbps Wireless USB Adapter is an external device, so there's no need to install anything inside your computer. This section contains step-by-step instructions for connecting the Wireless USB Adapter to your PC.

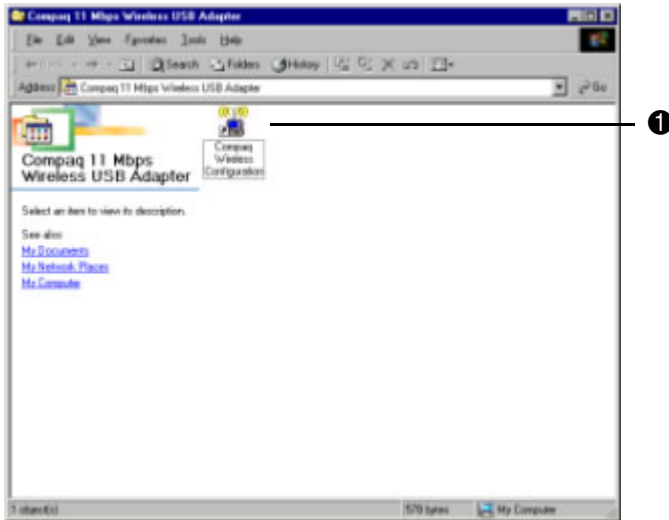
1. Connect the Type-A plug to the USB port on the PC. 1
2. Connect the Type B plug to the USB port on the Wireless USB Adapter. 2



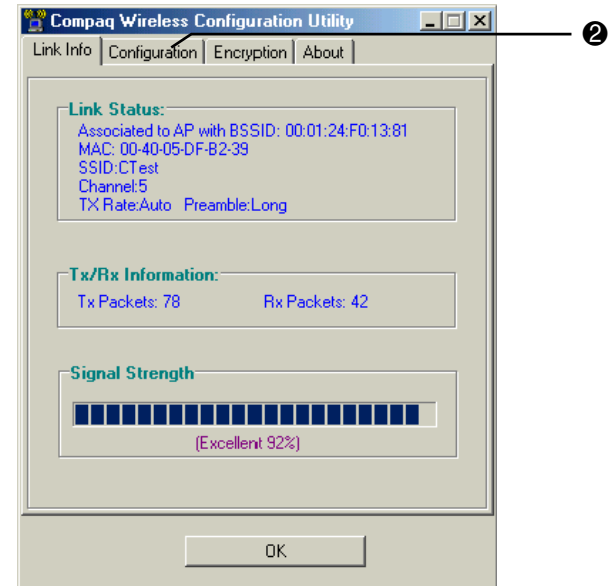
3. Verify that the plugs are firmly seated in the ports.
4. Windows will recognize Wireless USB Adapter. If prompted to do so, restart the computer.

Configuring Your Adapter

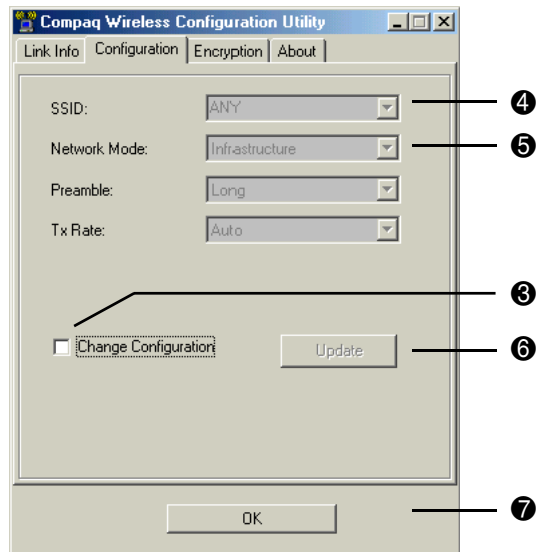
1. Maximize the Compaq 11 Mbps Wireless USB Adapter program folder window.



2. Double-click the **Compaq Wireless Configuration** icon. ❶
The Compaq Wireless Configuration Utility window is displayed.



3. Click **Configuration**. ❷
The Configuration tab is displayed.



4. Click the **Change Configuration** checkbox so that it is selected. ❸

5. Type a unique system ID into the **SSID** field. ❹

Note: By default, the SSID is set to *ANY*. To better secure your network, it is highly recommended that you change the default *ANY* SSID to a different one of your choosing.

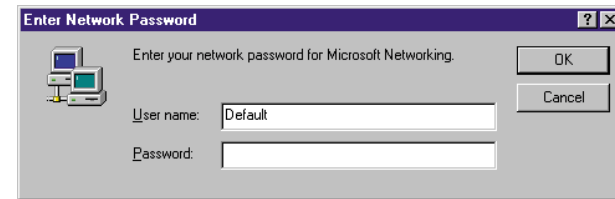
6. Select your network mode from the **Network Mode** pick list. ❺

If you are connecting to an access point or residential gateway, select *Infrastructure*. If you are connecting directly to another adapter (without an access point or residential gateway), select *Peer-to-Peer*.

7. Click **Update**. ❻

8. Click **OK**. ❼

9. Restart your **PC**.
The Network Password dialog box is displayed.



If you have a network password, type it into the **Password** field and click **OK**. If you do not have a network password, just click **OK**.

Note: *Do not click Cancel.* If you click Cancel, your PC will be unable to access network resources.

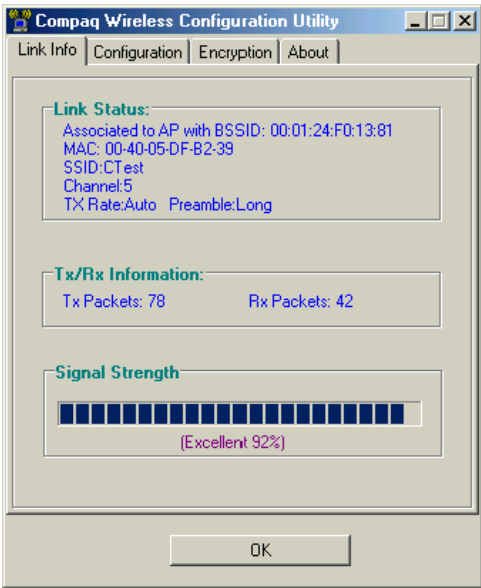
Installing the Software

When you are finished installing the drivers and hardware, you are ready to install the iPAQ Networking software. Refer to the [Software Documentation](#) on this CD.

Using the Configuration Utility

The Status Tab

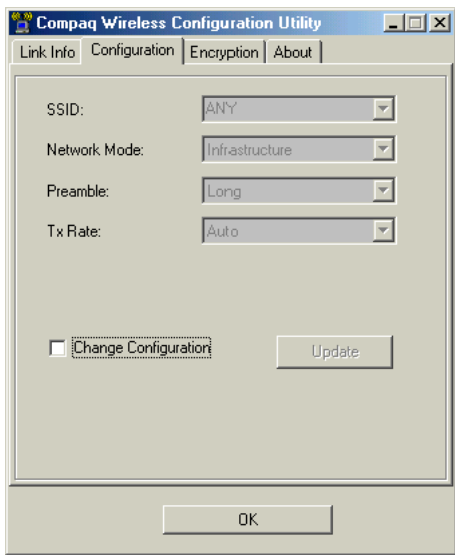
This tab displays link status, channel and transmit rate, and signal strength information.



Field	Function
Link Status	<p>This field displays the state of your Wireless USB Adapter. The default value is <i>associated</i>.</p> <p>Associated indicates that your Wireless USB Adapter is connected to another wireless adapter, access point, or wireless gateway. Networking is available when the Wireless USB Adapter is associated with an access point or another wireless adapter.</p> <p>Scanning means the node is searching for an available access point and trying to detect the SSID of an access point within range.</p> <p>Note: This field displays an error message if the driver fails to initialize. Click Rescan to search for a connection. When set to infrastructure mode, the Wireless USB Adapter scans until it finds one or more access points with matching SSIDs. Then it attempts to authenticate and associate with the access point. When the Wireless USB Adapter is set to peer-to-peer mode, it will scan for five seconds for an existing peer-to-peer network using the same SSID. If it cannot locate one, it will start its own peer-to-peer network.</p>
Tx/Rx Information	<p>These two fields display the data transfer rate and data receive rate that are being used by your Wireless USB Adapter.</p>
Signal Strength	<p>This bar graph is active when the node is in infrastructure mode. It displays normalized signal strength as reported by the radio. The Wireless USB Adapter searches for another access point if the signal strength is poor.</p> <p>Note: If you are using peer-to-peer mode, no bar graph is displayed.</p>

The Configuration Tab

This tab allows you to view and change the operating parameters of your Wireless USB Adapter without having to reboot your PC. If you want to change these settings, you must first click the **Change Configuration** checkbox to select it, so that the fields become available. Click **Update** to put your changes into effect.

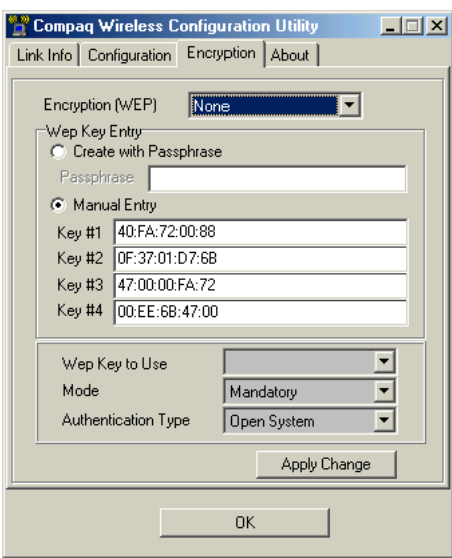


Field	Function
SSID	The default SSID is <i>ANY</i> . The SSID must be the same for all PCs on your wireless network.
Network Mode	The default mode is <i>infrastructure</i> . <i>Infrastructure</i> requires the presence of an 802.11b access point. All communication is done when the access point relays packets to other wireless clients or nodes on a wired network. <i>Peer-to-peer</i> is the 802.11b peer-to-peer mode of operation. It supports only one wireless cell for each SSID. Communication flows from client to client without using an access point.
Preamble	The default preamble is <i>long</i> . <i>Long</i> supports the “long preamble as well as header” specified in IEEE 802.11b, which allows interoperation with the current 1 Mbps and 2Mbps DSS specification. <i>Short</i> specifies an optional “short preamble and header” that is intended for applications that require maximum throughput and for which interoperability with legacy and non-short-preamble-capable equipment is not a consideration.
Tx Rate	The default transfer rate is set to <i>fully automatic</i> . The setting has options for 1 Mbps, 2 Mbps, Auto 1 or 2 Mbps, 5.5 Mbps, and 11Mbps. For most applications, it is recommended to leave the setting at fully automatic.

The Encryption Tab

This tab allows you to specify the level of security on your wireless network with Wired Equivalent Privacy (WEP) encryption. WEP encrypts each frame transmitted from the wireless adapter using one of the keys entered in the WEP Key Entry field. The Wireless USB Adapter will only accept encrypted frames that it can decrypt correctly. Decryption can be completed only if the receiver has the WEP key used by the transmitter.

If you make changes to the encryption settings, you must click **Apply Change** to put the changes into effect.



Field	Function
Encryption (WEP)	The default is <i>disabled</i> . You can enable encryption by selecting <i>64-bit</i> or <i>128-bit</i> from the drop-down pick list. 64-bit encryption is the standard encryption for your Wireless USB Adapter. As many as four encryption keys can be set for 64-bit encryption. 128-bit encryption is the highest form of encryption for your Wireless USB Adapter. A single encryption key is used.
WEP Key Entry	Create with Passphrase. The passphrase method is recommended because it is the fastest, easiest way to generate WEP keys. A passphrase can be any text string of 31 alphanumeric characters. You can click the radio button to select or deselect the passphrase option. Manual Entry. These four fields (or one field, if you're using 128-bit encryption) can be used to manually enter the encryption keys. This may be necessary if you want your node to match keys in another vendor's product. These fields also display the keys generated by a passphrase. Each key must consist of hex digits (numbers 0-9 or letters A-F). You can click the radio button to select or deselect the manual entry option. The key entry fields are available when the manual entry option is selected. Note: The configuration utility will not apply keys that are not entered correctly.
WEP Key to Use	If you have entered WEP keys manually for 64-bit encryption, you can select the key you wish to use for encryption from this pick list.

Mode	<p>Mandatory specifies that WEP encryption is required to establish connection with other stations within the wireless network.</p> <p>Optional allows communication with other stations within the wireless network regardless whether WEP encryption is enabled or disabled in the other stations.</p>
Authentication type	<p>Open System is the default. If the access point uses Open System authentication, the Wireless USB Adapter must be set to the same authentication type.</p> <p>Shared Key is available only when WEP encryption is enabled. Shared Key authentication supports authentication of hosts as members of a group with a shared secret key. Shared Key authentication requires the use of the WEP privacy mechanism to share the key without transmitting the secret key in the open.</p>

The About Tab

This tab displays the product version, the driver version and date, the configuration utility version and date, and the NIC firmware version.



Technical Specifications

Standards	IEEE 802.11b All major networking standards (including IP, IPX)
Adapter type	USB 1.1
Transport protocols	TCP/IP, IPX/SPX, NetBEUI, NDIS, TCP/IP Protocols, BOOTP, Telnet, DHCP, FTP
System requirements	IBM compatible with Pentium 100 or faster processor USB port
Supported operating systems	Windows 98/98SE, ME, or 2000
Data security	64-bit and 128-bit wired equivalent privacy (WEP) encryption
Data rate (Mbps/channel)	11 (CCK) 5.5 (CCK) 2 (DQPSK) 1 (DBSK)
Utility software	Compaq Wireless Configuration Utility (setup and diagnostics tool)
Key management	Automatic dynamic key allocation through public key
Range	Indoor - per cell approximately 35 to 100 meters (110 to 320 feet) Outdoor - per cell approximately 100 to 300 meters (330 to 980 feet)

Diagnostic LED	Power, Link/Activity
Power	Operating voltage: +5V, +3V DC (+/-) 5%
Transmit power	Nominal temperature range: 17 dBm Extended temperature range: 14 dBm min
Transmit power	2.7v to 3v: 14 dBm min.
Network architecture	Supports peer-to-peer mode (without access point) or infrastructure mode (communication to wired networks via access points with roaming) compliant with IEEE 802.11b standards
Antenna	External antenna supporting diversity
Mobility	Seamless roaming across cell boundaries within access point range
Frequency range	2.4 - 2.4835 GHz, direct sequence spread spectrum
Operating channels	1-11 United States (FCC), 1-11 Canada (DOC), 1-14 Japan (MKK), 1-13 Europe (Except Spain and France) (ETSI)
Dimensions	106 mm x 75 mm x 23 mm
Temperature	Operating temperature: -10°C to 55°C Storage temperature: -20°C to 75°C
Humidity	Maximum up to 95% non-condensing

For More Information

All the information you need to get your network up and running is on this CD. To learn more about Compaq's other networking products, or if you need additional information regarding components or technology, the Compaq website at compaq.com/athome features a variety of resources. Here's where you can find other sources of information:

Registration

You can register your new product online at the Compaq website compaq.com/register.

Glossary

A [Glossary](#) on this CD provides a brief list of commonly used technical terms and their definitions.

Technical Support

If you have a networking problem not addressed in the troubleshooting section, Compaq offers technical support online at compaq.com/consumersupport. You can also call 1-888-302-7358.

Troubleshooting

Problem: Windows does not find the Wireless USB Adapter.

Resolution: Check the following.

- > Verify that the Wireless USB Adapter cable is properly inserted into the USB port on the PC.
- > Verify that the Wireless USB Adapter is enabled in the bios. Check your computer user guide for more information.

Problem: The Wireless USB Adapter does not work properly.

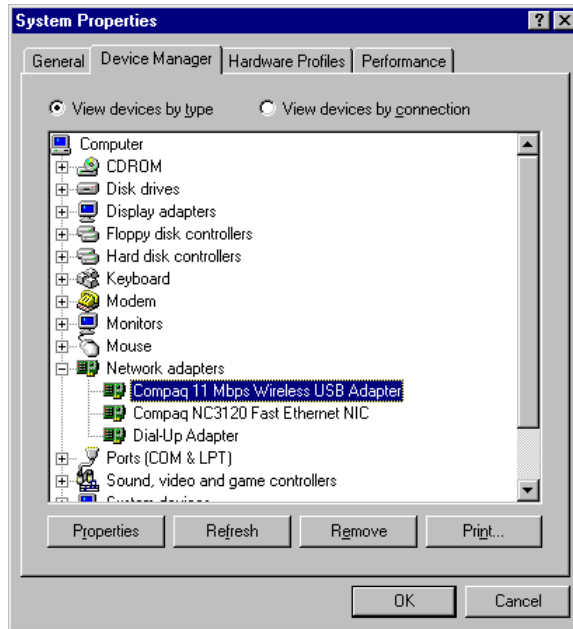
Resolution: Try the following.

- > Disconnect the Wireless USB Adapter cable from the USB port on the PC, then reconnect it.

If you are running Windows 98 or ME and reconnecting the cable does not solve the problem:

1. Right-click the **My Computer** icon on your desktop and select **Properties** from the pop-up menu.

The Properties window is displayed.



2. Click the **Device Manager** tab.
3. Click the **plus sign** next to **Network adapters**. The Wireless USB Adapter will be listed there, if it was installed successfully. If you see a yellow exclamation mark next to the Wireless USB Adapter listing, resources may be conflicting. Follow the steps below:
 - a. Uninstall the driver software from your PC.
 - b. Restart your PC.
 - c. Repeat the hardware and software installation as specified in this user guide.

Problem: I cannot communicate with the other computers linked via the wireless network in the *infrastructure* configuration.

Resolution: Check the following.

- > Verify that the notebook or desktop is powered on.
- > Verify that your Wireless USB Adapter is configured on the same channel, SSID, and WEP as the other computers in the configuration tab.

Note: The Channel setting is available only when you are using the peer-to-peer networking mode. If you are using the infrastructure networking mode, no channel setting is required.

Regulatory Compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or television technician for help.

Modifications

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by Compaq Computer Corporation may void the user's authority to operate the equipment.

Declaration of Conformity for products marked with the FCC logo - United States only

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For questions regarding your product, contact:
Compaq Computer Corporation
P. O. Box 692000, Mail Stop 530113
Houston, Texas 77269-2000
Or, call 1-800-652-6672 (1-800-OK COMPAQ)

For questions regarding this FCC declaration, contact:
Compaq Computer Corporation
P. O. Box 692000, Mail Stop 510101
Houston, Texas 77269-2000
Or, call (281) 514-3333

To identify this product, refer to the part, series, or model number found on the product.